International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM 2017 vol.17 N11, pages 345-352

Mineralogical and geochemical features of the black sands of the south-west coast of India

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Abstract

© SGEM2017. All Rights Reserved. This article discusses a comprehensive study of the sand samples, which were selected on the Arabian seashores (Kovalam, Kollam, Kerala, India), and produced ilmenite, zircon, garnet and monazite concentrates (Chavara field, Kerala, India). As a result of versatile research, realized in the laboratories of KFU, which represented mineral and radionuclide composition of the studied samples, marginally represented La, Yb, Hf. Discovered free of impurities zircon, as well as zircon of the hafnium species. The studies show that the “black sands” of the coastal-marine zone of Kerala have heterogeneous composition. The predominant components are ore minerals (ilmenite, less – rutile). Other minerals are quartz, zircon, monazite, sillimanite, garnet. The investigated samples of the “black sands” contain an increased amount of radioactive chemical elements, through high content of monazite (with content of thorium-232). High concentrations of ore minerals on the coast at the expense the sea influence in the littoral areas, promotes removal of the light components and accumulation of heavy fractions.

http://dx.doi.org/10.5593/sgem2017/11/S01.044

Keywords

Black sands, Chavara, India, Monazite, Zircon

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